

REMARKS

Claims 20-48 are pending in this application. No amendments have been made in response to the outstanding Office Action.

35 U.S.C. § 103(a) Claim Rejection over Higgins

Claims 20, 22-24, 26-28, 32-34, 38-41, and 45-47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Higgins III (U.S. Patent No. 6,294,405; Higgins), for the reasons noted on pages 3-11 of the Office Action. Applicants respectfully traverse this rejection.

The Office recognizes that Figure 1 of Higgins does not describe the claimed limitation that the stud bump is located directly on the RDL pattern since the stud bump (20) of Higgins is instead located on an UBM pad (15). Relying on M.P.E.P. § 2144.04(II)(A), the Office continues to argue that eliminating the UBM pads 15 in the Figure 1 device would have been obvious because it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art.

1. MPEP § 2144.04(II)(A): Required v. Desired

The Office supports the rejection by citing M.P.E.P. § 2144.04(II)(A) which contains the statement that “omission of an element and its function is obvious if the function of the element is not desired.” But a closer analysis of the legal doctrine underlying M.P.E.P. § 2144.04(II)(A) demonstrates how it does not support the Office’s position.

The Office's consistent assumption has been that the Figure 1 device of Higgins can operate without the UBM and, so, it is not "required." *See Office Action of November 22, 2006, page 2.* But that is not what this legal doctrine states, nor is that what this section of the MPEP states. The focus is not on what is (or is not) "required." Rather, the focus is on what is (or is not) "desired."

Both the Office and the cited prior art indicate why the UBM and its functions would have been "desired" by the skilled artisan. First, the Office has stated on the record that the UBM would have been desired by the skilled artisan. Specifically, the Office admitted that the UBM makes the electrical pad "operate better." *See Office Action of November 22, 2006, page 2.* Second, the cited prior art also describes what is desired about the UBM. Even the Office recognizes that Chakravorty describes that the UBM layer is used to ensure good wettability and adhesion of the overlying metal bumps. *See column 9, lines 13-16.*

## 2. No Bright Line Rule Resulted From *In re Karlson*

In support of the rejection, the Office has cited the decision by U.S. Court of Customs and Patent Appeals of *In re Karlson*, 136 USPQ 184 (C.C.P.A. 1963). The Office contends that in light of this decision, the omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *See Office Action, page 5.*

But the decision of *In re Karlson* was clarified two years later. The same court, the U.S. Court of Customs and Patent Appeals, clarified that *In re Karlson* did not create a mechanical rule for obviousness, and that the language to this effect in *In re Karlson* was never intended to short-circuit the clear wording of 35 U.S.C. 103. *In re Wright*, 145 U.S.P.Q. 182 (C.C.P.A.

1965). Thus, an obviousness rejection can't be based solely on the language of *In re Karlson* since this would defeat the very purpose of the 35 U.S.C. §103 inquiry. *Id.* Instead, the Office must look to all of other inquiries and requirements that must be met to substantiate a *prima facie* case of obviousness.

### 3. Other Considerations Weigh Against Conclusion of Obviousness

Looking to the evidence of record illustrates why the Office has not met its burden of substantiating a *prima facie* case of obviousness. The Office recognizes that the UBM makes the electrical pad operate better. If a component makes a device operate better, it stands to reason that such a component would be desirable to be included. Indeed, the inclusion of a component that makes a device operate better would seem to be accepted wisdom in any technology, and proceeding contrary to accepted wisdom in the art is evidence of non-obviousness. *See M.P.E.P. § 2145 X(D)(III); see also, In re Hedges, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986).*

Applicants also submit additional evidence of why the Office has not met its burden of substantiating a *prima facie* case of obviousness. Attached hereto is a Declaration under 37 C.F.R. § 1.132 submitting evidence of why the skilled artisan would have not been motivated to eliminate the UBM based on the prior art cited by the Office.

Thus, the Office has not substantiated a *prima facie* case of obviousness of the rejected claims. Accordingly, Applicants respectfully request withdrawal of this ground of rejection.

35 U.S.C. §103: Higgins & Chakravorty

Claims 21, 25, 29-31, 35-37, 42-44, and 48 were rejected under 35 U.S.C. § 103(a) as unpatentable over Higgins in view of Chakravorty (U.S. Patent No. 6,350,668), for the reasons noted on pages 11-18 of the Office Action. Applicants respectfully traverse this rejection.

Applicants previously argued that the benefits provided as motivation to combine references (i.e. compactness, lower inductance, eliminates processing steps, uses fewer materials, and reduces cost) would not be attained with the combination of Higgins and Chakravorty. In response, the Office maintains that Applicant “merely alleged that these benefits would not have been obtained and has not provided any proof to back up these assertions.” Accordingly, Applicant submits the attached Declaration under 37 C.F.R. § 1.132 as evidence of these benefits.

Thus, the Office has not shown that the combination of the cited references teaches or suggests each and every limitation in the rejected claims. Accordingly, Applicant requests withdrawal of this ground of rejection.

CONCLUSION

For the above reasons, Applicants respectfully request the Office to withdraw the pending grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Request, including a fee for an extension of time not accounted for above, please charge the fee to our deposit account 50-0843.

Respectfully Submitted,

By \_\_\_\_\_

  
KENNETH E. HORTON  
Reg. No. 39,481

September 13, 2007